resource bundles represented in resource bundle data structure 220 and the demands represented in demand data structure 200.

[0033]   A generic revenue management data model 125 which includes a demand data structure 200, resource data structure 210, resource bundle data structure 220 and resource bundle to demand link data structure 230 can be appropriate for revenue management problems which require a network representation. However, many revenue management optimization algorithms do not account for network dependencies, and only function on a local level. For example, in the airline industry, the very common EMSR algorithm optimizes only one resource at a time, while ignoring other resources. In order to facilitate the use of local optimization algorithms, generic revenue management data model 125 can include a resource demand data structure 240. Resource demand data structure 240 can contain a representation of the demands placed on individual resources ("resource demands"). In the case of the airline industry, for example, the resource demand might be the demand placed on a seat in economy class for a particular flight leg. It should be noted that demand data structure 200, resource data structure 220, resource bundle to demand link data structure 230 and resource demand data structure 240 can all include data stored on a database on a tangible storage medium.

[0034]   As discussed in conjunction with Figure 1, one advantage of generic revenue management data model 125 is that algorithms can be applied to the data contained therein in various sequences. For example, an algorithm might first be applied to generic revenue management data model 125 to optimize the network. A second algorithm could then use the result the of the network optimization to decompose the network and populate resource demand data structure 240. In the context of optimization engine 100 optimizing an airline network, this might first involve solver 140 applying demand to come linear programming to the data in generic revenue management data model 125 in order to determine the optimal bundles to satisfy the network demands. Then, solver 150 could apply a second algorithm to decompose the network and determine the demands for individual resources. The resource demands would be stored in resource demand data structure 240. Solver 160 could then optimize the network at a local level by applying a third algorithm, such as EMSR, to the data in resource data structure 210 and resource demand data structure 240. By applying the algorithms in this manner, the both the network as a whole and individual local resources can be optimized.

[0035]   The foregoing example was for illustrative purposes, and it should be understood that a variety of revenue management algorithms could be applied to generic revenue management data model 125 in various sequences. It should be understood that the information stored in generic revenue management data model 125 can be dependent on or independent of the particular sequence of optimization algorithms that are applied to generic revenue management data model 125.

[0036]   Along with supporting the sequential application of optimization algorithms, generic revenue management data model 125 provides many important advantages. For revenue managers, these advantages include the industry independence of generic revenue management data model 125, the ability to seamlessly integrate disparate optimization approaches using generic revenue management data model 125, the ability to integrate new optimization algorithms as they are developed, the increased ease with which network problems can be decomposed for local optimization and, from a training standpoint, the option to use a unified language for expressing revenue management problems.

[0037]   Although the present invention has previously been described in detail, an illustrative example of a network to which the present invention could be applied would aid in an understanding of the benefits and flexibility of the present invention. Figure 3 is a diagrammatic representation of an example airline network 300 to which the present invention could be applied. In airline network 300, an airline might offer a flight from city A (node 310) to city C (node 320), the A-C flight, a flight from city B (node 330) to city C, the B-C flight, and a flight from city C to city D (node 340) the C-D flight. Because A-C, B-C and C-D could each be a single flight leg, they would be the resources of airline network 300 and could represented in resource data structure 210. For the sake of simplicity, in this example, the airline only offers three flights: A-C, B-C and C-D.

[0038]   Based on the three resources offered in airline network 300, an airline would group flights together to offer a putatively reasonable transportation service. Hypothetical resource bundles might include an A-C itinerary, a B-C itinerary, the C-D itinerary, an A-C-D itinerary (e.g., the A-C flight connecting with the C-D flight), and a B-C-D itinerary (e.g., the B-C flight connecting with the C-D flight). Table 1 summarizes the set of resource bundles that could be represented in resource bundle data structure 220.

Table 1
Resource Bundles
A-C
B-C
A-C-D
B-C-D
<u>C-D</u>

[0039] In airline network 300, passengers desiring to go to various destinations in airline network 300 will place different demands on the network. Additionally, passengers may be willing to pay different amounts for the same itinerary. For example, a leisure passenger who books a flight early may only be willing to pay $90 for the A-C-D itinerary, while a last minute business passenger would be willing to pay $100 for the same itinerary. Table 2 summarizes an exemplary set of demands that can be placed on airline network 300. Table 2 includes the possible itineraries, given that there are only three flights in airline network 300, the fare class of each demand (e.g., class I or class II, which are last minute or advance purchases respectively), the ticket price and the number of tickets demanded. The hypothetical demands contained in Table 1 could be based on ticket purchases or could be provided by a forecaster, such as forecaster 170.

Table 2			
Itinerary	**Fare class**	**Price**	**Number**
A-C	I	$100	60
A-C	II	$ 90	90
A-C-D	I	$120	30
A-C-D	II	$110	30
B-C	I	$ 80	10
B-C	II	$ 70	80
B-C-D	I	$150	30
B-C-D	II	$130	50
C-D	I	$ 70	20
C-D	II	$ 60	10